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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/314,034	05/18/1999	MARK F. SCHULZ	54565USA4A	4599
32692	7590	02/06/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			SHEWAREGED, BETELHEM	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

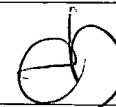
Office Action Summary

Application No.

09/314,034

Applicant(s)

SCHULZ ET AL.



Examiner

Betelhem Shewareged

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22,25-28,30,31 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-39 is/are allowed.
- 6) ☒ Claim(s) 22,25-28,30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's response filed on 12/29/2003 has been fully considered. All previous rejections have been withdrawn in view of applicants' amendments and comments.
2. Claims 1-21, 23, 24, 29 and 32 are canceled, claim 22 is amended, and thus claims 22, 25-28, 30, 31 and 33-39 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22, 25-28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacs (US 6,206,517) in view of Waller, Jr. et al. (US 6,632,510 B1).

Kovacs discloses an ink jet printing medium comprising a substrate and an image recording layer thereon (abstract). The substrate is equivalent to applicants' macroporous substrate –it comprises Tyvek® which is used by applicants in Example 5 (see col. 6, line 66 through col. 7, line 7). The image recoding layer comprises nonionic, hydrocarbon or fluorocarbon surfactants and a matting agent such as titanium dioxide, which is equivalent to applicants' opacifying agent/pigment (see col. 6, lines 28-33). Kovacs does not limit the additives that may be placed in its image recording layer. The

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image recording layer may comprise conventional additives, including waterproofing agents (see col. 6, lines 26-40). Waller, Jr. teaches a multivalent metal salts comprising ferrous sulfate, zinc acetate, magnesium sulfate and metal cation such as Cr, Cu and Ta (col. 9, line 67 thru col. 10, line 30) are added to a solution to be impregnated to a porous substrate in order to serve as reagents to rapidly destabilize dispersants surrounding pigment particles in the ink, whereby the pigment particles coagulate or flocculate as the remainder of the ink fluid continues through pores and along the surfaces of a receptor medium. The multivalent salts therefore provide a chemical means of pigment management along surface of the pores, and coats surfaces of the receptor medium and, once dried, is resistant to physical removal (col. 8, line 58 thru col. 9, line 2). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the multivalent metal salts of Waller, Jr. in the image recording layer of Kovacs so as to rapidly destabilize dispersants surrounding the pigment particles in the ink, whereby the pigment particles coagulate or flocculate as the remainder of the ink fluid continues through pores and along the surfaces of the ink jet printing medium. The multivalent salts therefore provide a chemical means of pigment management along surfaces of pores, and coats surfaces of the ink jet printing medium and, once dried, is resistance to physical removal (col. 8, line 58 thru col. 9, line 2 of Waller Jr.).

With respect to claim 25, since Tyvek® is identical to the supports used by applicants in the invention (Example 5), it is inherent the support possesses the claimed porosity value.

With regard to claims 30 and 31, Waller, Jr. teaches a variety of surfactant such as sodium salt of dioctylsulfosuccinate, which is a hydrocarbon based anionic surfactant (col. 8, line 22) are added to the solution to be impregnated to the porous substrate in order to provide suitable fluid management for the image graphic (col. 7, lines 45-64). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the sodium salt of dioctylsulfosuccinate surfactant of Waller Jr. in the image recording layer of Kovacs so as to provide suitable fluid management for the image graphics (col. 7, line 48).

Allowable Subject Matter

5. Claims 33-39 are allowed. The closest arts Kovacs and Waller, Jr. fail to teach or suggest aluminum sulfophthalate, aluminum sulfoisophthalate or a combination thereof as the multivalent metal salt.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 571-272-1529. The examiner can normally be reached on Mon.-Thur. 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Betelhem Shewareged
January 16, 2004.